634

# ARKIV FÖR FYSIK

UTGIVET AV

KUNGL. SVENSKA VETENSKAPS-

AKADEMIEN

## Band 15

Med 42 avhandlingar

ALMQVIST & WIKSELL / STOCKHOLM

1959

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Häfte | 1 | innehållande | Nr | 1— | 7 | utkom | den | 10 april 1959 |
| » | 2 | » | Nr | 8—15 | | » | » 15 » | 1959 |
| » | 3 | » | Nr | 16—24 | | » | » 8 maj | 1959 |
| » | 4 | » | Nr | 25—29 | | » | » 12 » | 1959 |
| » | 5 | » | Nr | 30—35 | | » | » 12 » | 1959 |
| » | 6 | » | Nr | 36—42 | | » | » 25 » | 1959 |

## FEMTONDE BANDETS INNEHÅLL


Sid.

1. Sokolowsky, E., Systematic study of electron binding energies of some fourth and sixth period elements by means of the photo electron method 1– 30
2. Eriksson, H. A. S., On spinor wave equations containing reflection operators . . . . . 31– 32
3. Stockendal, R. and Hultberg, S., A study of internal conversion coefficients of transitions in $Pb^{205}$ and $Pb^{206}$ . . . . . 33– 48
4. Larsson, K.-E. and Otnes, K., A study of the temperature dependence of the elementary excitations in Helium II by the use of cold neutrons 49– 63
5. Borelius, G., Contributions from thermal lattice defects to the energy content of Au, Ag, Cu and Al . . . . . 65– 80
6. Atterling, H. and Forsling, W., Light polonium isotopes from carbon ion bombardments of platinum . . . . . 81– 88
7. Möller, E., A control and telemetering system, using light beams, for a van de Graaff generator . . . . . 89– 96
8. Lindgren, E. R., Liquid flow in tubes I. The transition process under highly disturbed entrance flow conditions . . . . . 97–119
9. Bäckström, G., Lindskog, J., Bergman, O., Bashandy, E. and Bäcklin, A., Contributions to the decay of $Tb^{160}$ to $Dy^{160}$ . . . . . 121–129
10. Olsson, P. O. M., On Coulomb wave functions . . . . . 131–144
11. Sjöstrand, N. G., The diffusion cooling effect in heavy water . . . . . 145–146
12. Sjöstrand, N. G., On the theory underlying diffusion measurements with pulsed neutron sources . . . . . 147–158
13. Olsson, P. O. M., On transition matrix elements between states in a Coulomb field I. . . . . 159–167
14. Johansson, I., The infrared spectrum of LiI . . . . . 169–180
15. Andersén, E., Approach to the quantum mechanical many-body problem with strong two-particle interaction. II . . . . . 181–192
16. Lundqvist, S. O., Lundström, V., Tenerz, E. and Waller, I., On the lattice vibrations and specific heat of KCl and NaCl at low temperatures 193–206
17. Grabe, B., A quantum mechanical calculation of the electron distribution in carboxyl-phosphate and some related molecules . . . . . 207–224
18. Fields, P. R., Friedman, A. M., Milsted, J., Atterling, H., Forsling, W., Holm, L. W. and Åström, B., On the production of element 102 225–228
19. Huldt, L., Determination of free carrier lifetimes in semiconductors from the relaxation time of photo-excited infrared absorption . . . . . 229–236
20. Egardt, L. and Lundqvist, S. O., Inelastic scattering of protons by $O^{16}$ 237–240
21. Nordling, C., Energy shifts of *L*-levels in some 5th period elements due to oxidation and alloying . . . . . 241–250
22. Möller, E., Gamma rays from the 7.6 Mev state of $O^{15}$ . . . . . 251–256
23. Grahn, R., A theoretical investigation of the role of polarization in the formation of hydrogen bonds . . . . . 257–278

24. Atterling, H., Forsling, W. and Åström, B., Neutron-deficient polonium isotopes from neon ion bombardments of wolfram . . . . . 279–288
25. Olsson, P. O. M., Transition matrix elements between states in a Coulomb field. II . . . . . 289–301
26. Asplund, I. and Wiedling, T., On the possible existence of a zero-spin excited state in $Ca^{42}$ . . . . . 303–306
27. Hultberg, S., A study of the photoelectric effect and its application to the determination of gamma-ray intensities . . . . . 307–353
28. Hultberg, S., and Stockendal, R., Absolute determinations of K-shell photoelectric cross-sections for uranium at the gamma-ray energies 1173 and 1332 keV . . . . . 355–360
29. Olsson, P. O. M. and Hultberg, S., A theoretical study of the internal conversion with special application to magnetic dipole transitions . . . 361–386
30. Holm, G. and Ryde, H., Measurements on the radiations from the decay of $I^{134}$ and $I^{133}$ . . . . . 387–396
31. Nordling, C., *K* and *L* energy levels in some fourth and fifth period elements . . . . . 397–429
32. Nordling, C. and Hagström, S., Electron binding energies in uranium . 431–443
33. Lindgren, I. and Johansson, C. M., Nuclear magnetic dipole and electric quadrupole moments of radioactive bismuth isotopes . . . . . 445–462
34. Axensten, S., Johansson, C. M. and Lindgren, I., Nuclear spins of the bismuth isotopes $Bi^{199}$, $Bi^{200}$, $Bi^{201}$, and $Bi^{202}$ . . . . . 463–469
35. Sjöstrand, N. G., Mednis, J. and Nilsson, T., Geometric buckling measurements using the pulsed neutron source method . . . . . 471–482
36. Atterling, H. and Lindström, G., The 225-cm cyclotron at the Nobel Institute of Physics, Stockholm . . . . . 483–502
37. Lindgren, E. R., Liquid flow in tubes. II. The transition process under less disturbed inlet flow conditions . . . . . 503–519
38. Lagerqvist, A., Nilsson, N. E. L. and Wigartz, K., Rotational analysis of the $A^1\Pi$–$X^1\Sigma$ system of SnO . . . . . 521–530
39. Atterling, H., The acceleration of heavy ions in the Stockholm 225-cm cyclotron . . . . . 531–558
40. Fröman, P. O., Pettersson, R. and Vänngård, T., Electron spin resonance and thermoluminescence in irradiated fused quartz . . . . . 559–566
41. Beckman, O., Axelsson, B. and Bergvall, P., Effect of spectrometer window on the *K* absorption edge of Au . . . . . 567–578
42. Lehnert, B., A note on the confinement of charged particles by a magnetic field . . . . . 579–582